

**OPENER EXAMINATION – TERM 2 2024**  
**FORM TWO**  
**CHEMISTRY**  
**MARKING SCHEME**

1 A Atomic number- Is the number of protons in the nucleus of an atom.

Mass number- Number of protons and neutrons in the nucleus of an atom.

B Isotopes -are atoms of the same element with same atomic number but different mass number.

2 It is hot

Does not form soot.

3 .Graphite has a giant atomic structure which consists of hexagonal layers that are held by weak van der Waals forces . The layers therefore can easily slide over each other making graphite slippery this enables graphite to act as a lubricant to reduce friction between moving parts of machines.

4  $K_2CO_3 + 2 HCl$

5. Graphite contains free delocalized electrons which is responsible for the electrical conductivity while diamond does not.

6. a) separating funnel

b) X – oil W- water water is denser than oil.

7 coordinate bond and the other is covalent bond

8 a) H- It is large in size and the distance between the nucleus and the outermost electron is large hence less nucleus force of attraction making the outermost electron to be loosely held hence easily lost .

b) F

c) D

d) A –small in size hence high force of attraction between the nucleus and the outermost electron making it to be strongly attracted requiring high amount of energy to remove the electron.

9a)  $Mg + H_2O \rightarrow MgO + H_2$

b) It is insoluble in water-overwater method.

10 a) Luminous flame has 4 zones while non luminous has 3 zones.

Luminous flame produces soot while non-luminous forms non soot.

Luminous flame is preferred in lighting while non luminous is preferred in heating.

b) Easy to clean.

Can withstand high temperature.

For visibility.

c) pipette

burette

11a) Water    b) It is insoluble in water.

c) Any correct uses

12) Calcium is large in size therefore less nucleus force of attraction making the outermost electron to be loosely held hence easily reacts by losing the two electrons.

13 a) B

b) C

c) D

d) E

e) A

14) It is reactive and reacts with moisture in air and also easily catches fire when exposed to

air. 15a) P-2 Q-1 R-2 S-2

b) R and S –have two electrons in the outermost energy level hence found in the same group and elements within a group have similar physical and chemical properties.

C)  $S_2CO_3$

D) i) Q

ii) Group 7 it has 7 electrons in the outermost energy level

Period 2- It has 2 energy levels.

16 a) Isotopes

b)

c)  $X = 2.4$

17 a) Non luminous

It is very hot hence causes water to boil faster

b) when the airhole is closed

c) Any 2 correct uses of hydrogen gases